

Having thus described the invention, we claim:

887' 304' 1. A low spin golf ball comprising:
a core including a core component and a spherical mantle
encompassing said core component, said mantle comprising (i) a polymeric
material, and (ii) a reinforcing material dispersed throughout said polymeric
5 material, said core having a Riehle compression of at least about 75; and if
a polymeric outer cover disposed about said core, said
polymeric cover comprising a material selected from the group consisting of a
high acid ionomer, a low acid ionomer, an ionomer blend, a non-ionomeric
elastomer, a thermoset material, and combinations thereof, said polymeric cover
10 having a Shore D hardness of at least about 65.

887' 2. The golf ball of claim 1 wherein said polymeric material of
said mantle is selected from the group consisting of epoxy-based materials,
thermoset materials, nylon-based materials, styrene materials, thermoplastic
materials, and combinations thereof.

887' 3. The golf ball of claim 2 wherein said thermoset material is
selected from the group consisting of a polyimide thermoset, a silicone
thermoset, a vinyl ester thermoset, a polyester thermoset, a melamine
thermoset, and combinations thereof.

887' 4. The golf ball of claim 2 wherein said nylon-based material
is selected from the group consisting of nylon 6, nylon 6/10, nylon 6/6, nylon 11,
and combinations thereof.

887' 5. The golf ball of claim 2 wherein said styrene material is
selected from the group consisting of acrylonitrile-butadiene styrene,
polystyrene, styrene-acrylonitrile, styrene-maleic anhydride, and combinations
thereof.

887'

- ✓ 6. The golf ball of claim 2 wherein said thermoplastic material is selected from the group consisting of acetal copolymer, polycarbonate, liquid crystal polymer, polyethylene, polypropylene, polybutylene terephthalate, polyethylene terephthalate, polyphenylene, polyaryl, polyether, and combinations thereof.

887'

7. The golf ball of claim 1 wherein said reinforcing material is selected from the group consisting of silicon carbide, glass, carbon, boron carbide, aramid materials, cotton, flax, jute, hemp, silk, and combinations thereof.

887'

8. The golf ball of claim 1 wherein said mantle has a thickness ranging from about 0.001 inch to about 0.100 inch.

887'

9. The golf ball of claim 8 wherein said mantle has a thickness ranging from about 0.010 inch to about 0.030 inch.

4189'

10. The golf ball of claim 1 wherein said cover comprises at least one high acid ionomer resin comprising a copolymer of greater than 16% by weight of an alpha, beta-unsaturated carboxylic acid, and an alpha olefin of which about 10 to about 90% of the carboxyl groups of the copolymer are neutralized with a metal cation.

4189'

11. The golf ball of claim 10, wherein said cover is comprised of at least one high acid ionomer resin comprising a copolymer of about 17% to about 25% by weight of an alpha, beta-unsaturated carboxylic acid, and an alpha olefin of which about 10 to about 90% of the carboxyl groups of the copolymer are neutralized with a metal cation.

4189'

12. The golf ball of claim 11, wherein said cover is comprised of at least one high acid ionomer resin comprising from about 18.5% to about

21.5% by weight of an alpha, beta-unsaturated carboxylic acid, and an alpha olefin of which about 10 to about 90% of the carboxyl groups of the copolymer
5 are neutralized with a metal cation.

304' 13. / The golf ball of claim 1, wherein the cover has a thickness greater than .0675 inches.

304' 14. / The golf ball of claim 13, wherein the cover has a thickness greater than .0675 inches to 0.130.

304' 15. / The golf ball of claim 1, wherein the golf ball has a diameter of about 1.680 to 1.800 inches.

304' 16. / The golf ball of claim 15, wherein the golf ball has a diameter of about 1.700 - 1.800 inches.

304' 17. / The golf ball of claim 16, wherein the golf ball has a diameter of about 1.710 - 1.730 inches.

304' 18. / The golf ball claim 17, wherein the golf ball has a diameter of about 1.717 - 1.720 inches.

887' or 304' 19. A golf ball comprising:

see claim a core including a core component and a vitreous mantle
enclosing said core component, said core having a Riehle compression of from about 75 to about 115; and a polymeric outer cover disposed about said mantle,
5 said cover having a Shore D hardness of at least about 65.

20. / The golf ball of claim 19 wherein said vitreous mantle comprises a ceramic selected from the group consisting of silica, soda lime, lead

silicate, borosilicate, aluminoborosilicate, aluminosilicate, and combinations thereof.

~~21.~~ The golf ball of claim 19 wherein said vitreous mantle comprises a reinforcing material dispersed within said mantle.

~~See claim 21~~ 22. The golf ball of claim 21 wherein said reinforcing material ✓ is selected from the group consisting of silicon carbide, glass, carbon, boron carbide, aramid materials, cotton, flax, jute, hemp, silk, and combinations thereof.

~~See claim 19~~ 23. The golf ball of claim 19 wherein said polymeric outer cover ✓ 10 comprises a high acid ionomer of greater than about 16 weight percent acid.

~~304~~ 24. The golf ball of claim 19, wherein said core has a Riehle ✓ 11 compression of 80 to 90, and a diameter of about 1.540 to about 1.545 inches.

~~304~~ 25. The golf ball of claim 19, wherein said golf ball has a ✓ 12 diameter of about 1.70 to about 1.80 inches.

~~304~~ 26. The golf ball of claim 25, wherein said golf ball has a ✓ 13 diameter of about 1.710 to about 1.730 inches.

~~304~~ 27. The golf ball of claim 26, wherein said golf ball has a ✓ 14 diameter of about 1.717 to about 1.720 inches.

~~887/ 489/~~ 28. A low spin golf ball comprising:
a generally spherical core having an interior core component, and a mantle layer disposed about said core component, said mantle layer including at least one metal, said core exhibiting a Riehle
5 compression of from about 75 to about 115; and

a polymeric outer cover disposed about said core, said cover exhibiting a Shore D hardness of at least about 65.

29. The golf ball of claim 28 wherein said metal in said mantle is selected from the group consisting of steel, titanium, chromium, nickel, and alloy thereof.

304 30. The golf ball of claim 28 wherein said cover has a thickness between about 0.0675 inches to about 0.130 inches.

0044530 022704
102220 022704